Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims

1. (Previously Presented) A tunable power amplifier system comprising:

a power amplifier;

a power amplifier output matching circuit coupled to the power amplifier, the power amplifier output matching circuit having an impedance and comprising a ferro-electric tunable component, the ferro-electric tunable component having a ferro-electric material with an electrically tunable dielectric constant;

a control line operably coupled to the ferro-electric component;

a control source electrically coupled to the control line, the control source configured to transmit a control signal on the control line;

wherein the ferro-electric component, responsive to the control signal, adjusts the impedance of the matching circuit.

2. (Previously Presented) The tunable power amplifier system of claim 1, wherein the ferro-electric tunable component comprises a ferro-electric tunable capacitor.

3. (Previously Presented) The tunable power amplifier system of claim 1, further comprising a substrate wherein the ferro-electric tunable component and the power amplifier are integrated on the substrate.

4. (Previously Presented) The tunable power amplifier system of claim 3, wherein the output matching circuit further comprises a second ferro-electric tunable component.

5. (Previously Presented) The tunable power amplifier system of claim 4, wherein the second component comprises a tunable ferro-electric capacitor.

6. (Previously Presented) The tunable power amplifier system of claim 1, wherein the matching circuit comprises:

a first tunable ferro-electric capacitor coupled at a first end of the first capacitor to an output of the power amplifier and to ground at a second end of the first capacitor;

an inductive element coupled at a first end of the inductor to the first tunable capacitor and to the power amplifier, and;

a second tunable ferro-electric capacitor coupled, at a first end of the second capacitor to a second end of the inductive element and to ground at a second end of the second capacitor;

wherein, the ferro-electric component comprises one of the ferro-electric tunable capacitors.

7. (Previously Presented) The tunable power amplifier system of claim 6, wherein the inductive element comprises a lumped element inductor.

8. (Previously Presented) The tunable power amplifier system of claim 6, wherein the inductive element comprises a microstrip.

9-11. (Cancelled).

9 ~~12~~. (Previously Presented) A method of tuning an impedance match of a power amplifier comprising:

generating a control signal;

PN coupling the control signal to a ferro-electric component, the ferro-electric component having a ferro-electric material with an electrically tunable dielectric constant;

changing an impedance of the component, responsive to the control signal;

changing the impedance match of the power amplifier responsive to changing the impedance of the component.

10 ~~13.~~ (Previously Presented) A wireless communication device comprising:

a battery;

a transceiver;

a user interface;

a housing encasing the battery and the transceiver and adapted to present the user interface external to the housing;

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a power amplifier;

a power amplifier output matching circuit coupled to the power amplifier, the power amplifier output matching circuit having an impedance and comprising a ferro-electric tunable component, the ferro-electric tunable component having a ferro-electric tunable material with an electrically tunable dielectric constant;

a control signal generator for generating a control signal;

a control line coupled to the control signal generator and to the ferro-electric component;

a control source electrically coupled to the control line, the control source configured to transmit a control signal on the control line;

wherein the ferro-electric component, responsive to the control signal, adjusts the impedance of the matching circuit.

11 ~~14.~~ (Previously Presented) The tunable power amplifier system of claim 1, wherein the matching circuit matches a natural impedance of the power amplifier to a natural impedance of a component coupled to the output of the power amplifier.

12 ~~16~~. (Previously Presented) The tunable power amplifier system of claim 11 ~~14~~, wherein the component coupled to the output of the power amplifier is an isolator.

13 ~~16~~. (Previously Presented) The tunable power amplifier system of claim 12 ~~15~~, wherein the matching circuit matches from about 2 ohms at the power amplifier to about 12.5 ohms at the isolator.

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14 ~~17~~. (Previously Presented) The tunable power amplifier system of claim 10 ~~13~~, wherein the matching circuit matches a natural impedance of the power amplifier to a natural impedance of a component coupled to the output of the power amplifier.

15 ~~18~~. (Previously Presented) The tunable power amplifier system of claim 14 ~~17~~, wherein the component coupled to the output of the power amplifier is an isolator, and wherein the matching circuit matches from about 2 ohms at the power amplifier to about 12.5 ohms at the isolator.

19-20. (Cancelled).